

BE THE WAVE AR FRIG Y DON

Biodiversity

Background Information



cadwch keep
gymru'n wales
daclus tidy

**MARINE
CONSERVATION
SOCIETY**



UNDEB EWROPEAIDD
EUROPEAN UNION

**Cronfeydd Strwythurol a
Buddosoddi Ewropeaidd**

**European Structural
and Investment Funds**



Llywodraeth Cymru
Welsh Government



Ariennir gan
Lywodraeth Cymru
Funded by
Welsh Government



Biodiversity of the Ocean

Biodiversity is a broad term meaning the variety of plant and animal life. Biodiversity refers to diversity within species, between species and within an ecosystem. The ocean covers over 70% of the earth surface. The ocean is very diverse and is home to 50 - 80% of all life on earth. The majority of this diversity is found in productive shallow seas.

Our corner of the ocean, the North East Atlantic is home to some of the most colourful, fascinating and beautiful marine life in the world. In Wales we have over 870 miles of accessible coastline. Wales is on the boundary of three oceanic and climatic zones, North-east Atlantic, Arctic Boreal, and Lusitanian. Wales also has one of the largest tidal ranges in the world. These factors help to make the ocean around Wales uniquely rich due to the warm waters from the south meeting cool nutrient rich currents from the north, creating a home for an abundance of wildlife.

The biodiversity of species in our seas is extraordinary, from microscopic bacteria, algae and animals to giant whales. Several giants of the underwater world are found passing through Welsh waters, including huge leatherback turtles and the world's second largest fish, the basking shark. Welsh seas support internationally important populations of seals and dolphins, and the many cliffs and islands along the coastline are home to globally important seabird colonies.

Definitions

Biome - A biome refers to an area of our planet with similar climates, landscapes, animals and plants. Within the ocean we have five main biomes - Atlantic Ocean, Pacific Ocean, Indian Ocean, Southern Ocean, and the Arctic Ocean.

Ecosystems - An ecosystem is a natural environment in which plants and animals interact and interconnect. It refers to a habitat and its community of plants and animals. Ecosystems are influenced by biotic factors, for example the plants and animals living there, and by abiotic factors including climate, sediment and water. The term ecosystem is used broadly to describe the interactions between biotic and abiotic factors in an environment. An ecosystem could refer to a small pond for example or the ocean.

Habitat – A habitat is the natural home or environment in which an animal, plant or organism lives. A habitat contains everything an organism needs to survive such as food and shelter. A microhabitat is a small area within a larger habitat, which is home to a species.

Species - a group of living organisms consisting of similar individuals that share common characteristics and are capable of interbreeding.

Adaptation – the process of evolutionary change in which an organism becomes suited to its environment.



Biomes, ecosystem, habitats, species and adaptation in Wales

- To put all of this into the context of Wales. The **ocean biome** would be the North Atlantic.
- Within that biome, let's focus on an area along the Welsh coastline, Cardigan Bay. Within the bay there are a diverse range of ecosystems. The Dyfi Estuary is an example of one of the **ecosystems**.
- Within the estuary there are several **habitats** including saltmarsh, intertidal mud flats, and underwater mud.
- It's possible to go further still and refer to smaller microhabitats. In a saltmarsh for example, the **microhabitat** for a marine worm would be its burrow. Whereas the microhabitat for a coastal bird would be its nest at the top of the saltmarsh.
- In Wales there are several **species** of worms that live in saltmarsh mud, including sand mason worms and species of lug worms and rag worms.
- The rag worm *Hediste diversicolor* is well **adapted** to estuaries and can tolerate ranging salinities. It has adapted to this muddy environment by living in a burrow to hide from predators. In winter it digs deeper into the mud to escape cooling temperatures. It has adapted to feed without having to leave its burrow and be spotted by predators. The rag worm spins a mucus web that sits at the entrance to their burrow and traps small plants and animals. It then consumes the whole web.

Habitats and species in Wales

Please see the [Biodiversity in Wales PowerPoint](#) for information and images of the key habitats and species found in Wales. Information for each image can be found in the notes section.



cadwch keep
gymru'n wales
daclus tidy